

REMARKS

This application has been reviewed in light of the Office Action mailed August 4, 2009.

Reconsideration of this application in view of the below remarks is respectfully requested.

Claims 1 – 19 are pending in the application with claims 1, 5, and 12 being in independent form.

Rejection under 35 U.S.C. § 103 (a)

Claims 1 – 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,238,336 issued to Ouchi (hereinafter “Ouchi”) in view of Japanese Publication No. JP 11-076254 (hereinafter, “Masatoshi”) and further in view of U.S. Patent No. 5,759,154 issued to Hoyns (hereinafter “Hoyns”). Claim 1 recites, “a plurality of staggered-array annular-shaped recesses formed after formation of the cutting tip portion, the annular-shaped recesses having flat surfaces on bottoms and sides with smoothly curving interfaces therebetween, the annular-shaped recesses provided from a back surface of the cutting tip portion near a tip of the needle tube to a predetermined range on a surface of a tip portion of the needle tube, which is an area excluding the cutting tip portion.” As recited, the annular-shaped recesses are formed after formation of the cutting tip portion. Processing in this order prevents a crack occurring in the annular-shaped recesses. In contrast, if the cutting tip portion is formed after forming the annular-shaped recesses, the forming of the cutting tip portion would cause a crack in any of the annular-shaped recesses, which were already formed especially at the tip portion. The crack would reduce the strength of the edge portion of the tip portion, resulting in the tip portion breaking or bending. Whether or not forming the annular-shaped recesses before or after the forming of the cutting tip portion makes a prominent difference in that, in a state where the needle is not used at all, there is a crack that would reduce the strength of the tip portion of the needle tube.

Masatoshi teaches an annular recess 30 that has a sharp angle between two surfaces as shown in Figure 5. However, Masatoshi does not teach forming the annular-shaped recesses after the forming of the cutting tip portion. Further, the configuration shown in Figure 4 of Masatoshi is similar to the configuration as shown in Figures 1A and 1B of this application, which are presented to explain a problem of prior art. The annular-shaped recesses are formed on the surface of the tip portion, which would cause, “in the event that the ultrasonic waves are cast onto the needle tube 30 from directions perpendicular to the longitudinal direction of the needle tube 30, or even in the event the ultrasonic waves are cast from directions other than the perpendicular directions, the ultrasonic waves are reflected with great intensity in the incident direction, and thus the images of the needle tube are clearly displayed in the ultrasonic observation images.” (See, specification, page 3, lines 2-12). The present invention solves this problem by the specific configuration of the annular shaped recesses provided “from a back surface of the cutting tip portion near a tip of the needle tube to a predetermined range on a surface of a tip portion of the needle tube, which is an area excluding the cutting tip portion,” as recited in claim 1.

Ouchi even does not disclose any annular shaped recesses at all. Therefore, Ouchi does not cure the deficiency of Masatoshi. Hoyns is cited as teaching an ultrasonic puncture needle with recesses being in a staggered-array. However, Hoyns does not cure the deficiency of Masatoshi, either. Therefore, claim 1 is patentable over Masatoshi, Ouchi, and Hoyns. Independent claims 5 and 12 include the same recitation as claim 1, and therefore, claims 5 and 12, and dependent claims 2-4, 6-11, and 13-19 that are patentable for at least the same reason set forth above with regard to claim 1 over any combination of Masatoshi, Ouchi, and Hoyns.

Accordingly, Applicant respectfully requests withdrawal of the rejection with respect to claims 1-19 under 35 U.S.C. § 103(a).

CONCLUSIONS

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, claims 1-19 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Applicant's undersigned attorney at the number indicated below.

Respectfully submitted,

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